Product Description

Interleukin 11 (IL-11) is a pleiotropic cytokine with effects on various tissues including the bone marrow, brain, and intestinal mucosa (Du & Williams). It belongs to the IL-6 family of cytokines that share a common signal transducer, gp130. IL-11 induces the proliferation of hematopoietic stem cells (Lemoli et al.) and megakaryocytic progenitor cells (Bruno et al.), and the production of platelets (Neben et al.). IL-11 is produced by a variety of cell types including hematopoietic cells, mesenchymal cells, epithelial cells, and neuronal cells. It was first cloned from a cDNA library of the human bone marrow-derived stromal cell line KM-102 (Kawashima et al.). The binding of IL-11 to its receptor induces heterodimerization with the gp130 subunit and activation of JAK tyrosine kinases. IL-11 was the first pharmacologic agent approved for the treatment of chemotherapy-induced thrombocytopenia. IL-11 also plays a role in cancer progression by inducing the proliferation of epithelial cancer cells and the survival of metastatic cells at distant organs. Recently, IL-11 has gained interest for its role in the pathogenesis of diseases in dysregulated mucosal homeostasis associated with STAT3 upregulation, including gastrointestinal cancers (Putoczki et al.).

Product Information

Alternative Names: Adipogenic inhibitory factor, AGIF, Interleukin-11, Oprelvekin
Accession Number: P20809
Amino Acid Sequence:

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MPGPPPGLPR VSIPRAELST ADTQLAQL RDKPDGDH NLSDLPTLM SAGALGALQL
PGVLTRLRAD LLSYLRHVQW LRRAGGSSLK TLEPELGTLQ ARLDRILRRL QLLMSRLALP QPPPAPP
LAPPSSAWGG IRAAHAILGG LHLTDWAVR GLLKTRL
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Predicted Molecular Mass: 19.3 kDa
Species: Human
Cross Reactivity: Mouse, Monkey
Formulation: Lyophilized from a sterile filtered solution containing 0.1% trifluoroacetic acid.
Source: E. coli

Specifications

Activity: The specific activity is ≥ 4 x 10^5 units/mg (EC50 ≤ 2.5 ng/mL) as determined by a cell proliferation assay using T11 cells.
Purity: ≥ 95%
Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/μg protein.

Preparation and Storage

Storage: Store at -20°C to -80°C.
Stability: Stable as supplied for 12 months from date of receipt.
Preparation: Centrifuge vial before opening. Resuspend the product in sterile water containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles.
NOTE: If reconstituted product will be used immediately BSA is not required.
(A) The biological activity of Human Recombinant IL-11 was tested by its ability to promote the proliferation of T11 cells growing in the presence of IL-6. Cell proliferation was measured after 91 hours of culture using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 0.8 - 1.2 ng/mL.

(B) 1 μg of Human Recombinant IL-11 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-11 has a predicted molecular mass of 19.3 kDa but migrates to an apparent molecular mass of 23 kDa.

Related Products
For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References
Putočki TL et al. (2013) Interleukin-11 is the dominant IL-6 family cytokine during gastrointestinal tumorigenesis and can be targeted therapeutically. Cancer Cell 24(2): 257–71.